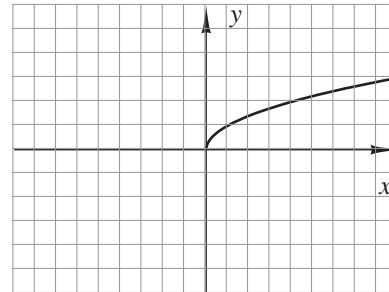
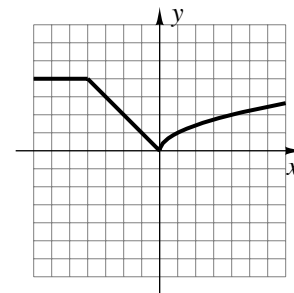


NOTE: These problems are to be done on Engineering paper, using the standard homework format. You may consult with me or with other students on this assignment. Questions about these problems will not be answered during class.

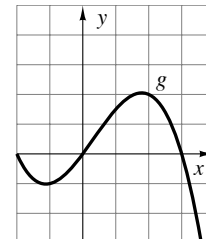
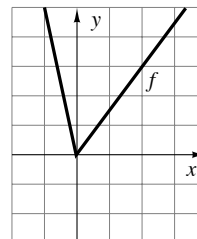
1. The graph of a function for $x \geq 0$ is shown in the adjacent figure. Draw the complete graph of the function if it is
- an odd function
 - an even function



2. The graph of the function $y = f(x)$ is shown in the adjacent figure. Suppose that $h(x) = -f(x+2) - 1$.
- Describe the transformation from function f to function h in symbols.
 - Sketch the graph of $y = h(x)$.



3. Refer to the graphs of the functions f and g to calculate the required quantities.
- $(fg)(-1)$
 - $(g \circ f)(2)$



4. The function $f(x) = \frac{-4}{x-3}$ is one-to-one.
- Find $f^{-1}(x)$ algebraically.
 - Sketch the graphs of both functions f and f^{-1} on the same coordinate system.

5. A circle of radius R lies in the first quadrant and is tangent to the x -axis and the y -axis as shown in the figure. Determine the radius r of the small circle which is tangent to the first circle and also the x -axis and the y -axis in terms of R .

[Hint: Find two different ways to calculate the length of segment OC .]

